TRP-C08M

USB To 4 RS232/422/485 Isolated Converter

User's Manual

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1. Introduction

TRP-C08M is a USB to 4 ports RS232/422/485 Isolated Converter support 3KV isolation, The RS422/485 interface Surge Protection to ensure the stability of the transmitted data, applications in harsh industrial environments.

TRP-C08M bridge using the latest USB chip it has high anti-interference ability, with heavy electric system with a stable job.

TRP-C08M can set up a separate data format baud-rate and other self-defined baud-rate.

TRP-C08M has the ability to automatically select RS232/422/485, through a simple wiring, automation management.

Two power input TRP-C08M support, optional USB power or external input power supply, two forward to provide power overload protection.

TRP-C08M simple to use, users first install the driver, you can plug and play ready to use, very convenient.

1-1.   Features
- USB-2.0 Device Controller.
- Support 3KV isolation in RS232/RS422/485 interface.
- Customer-specified Baud rates are also supported.
- Each Port cans impendent set up the baud-rate and data format.
- On-Chip 512-Byte FIFO for upstream and downstream data transfers for serial Port.
- Fully PLC support such as Mitsubishi Q,FX and FATEK serial....
- Auto direction flow control on RS-485.
- Auto baud rate switching from 75bps to 921.6 Kbps.
- Auto switching RS232/422/485 interface.
- 256 byte buffer for upstream and downstream data flow.
- Direct power from USB port or external power.
- Surge protection on RS422/485 data lines.
- Power and TX/RX communication LED indicator.
- DIN rail or panel mount support.
- Driver Support: Android/Win8.1/Vista64/32,Windows 98/ME/2000/XP/WIN 7/CE5.0~7.0, and Linux, and Mac OS .

1-2.   Specification
- Input: USB 2.0.
- RS232 signal: isolated 3KV 4 Pair16c450/16c550 compatible (TXD, RXD, RTS, CTS, ISO. GND)
- RS422 signal: isolated 3KV 4 Pair Differential 4 full-duplex wires (TX+, RX+, TX-, RX-)
- RS485 signal: isolated 3KV 4 Pair Differential 2 half-duplex wires (D+, D-).
- Data Format: Asynchronous data with any combination of bits, parity, stop
- Parity type: None, odd, even mark, space.
- Data bit: 5, 6, 7, 8
- Stop bits: 1, 1.5, 2.
- Flow Control: Xon/Xoff, Hardware, None
- Cable: USB 2.0 type A to type B cable.
- Communication speed: 75~921Kbps.

- RS422/485 line protection: Against surge, short circuit,+/- 15KV ESD and voltage peak.
- RS232 line protection: +/- 15KV ESD.
- Distance: RS422/485 Up to 4000ft (1250M).
- Connection type: Screw terminal for maximum AWG #12 ~ 30 wires.
- Din-Rail mountable: Option.
- Two power input: USB power or external Power.
- Power consumption: 190mA by USB power.
- Operating environment: -10 to 60℃.
- Storage temperature: -20 to 65℃.
- Dimension: 151mm X 111mm X 26mm.
- Weight: 691(W/Packing) .
- Humidity: 10-90% non-condensing.

2. Hardware Description

2-1. Panel layout
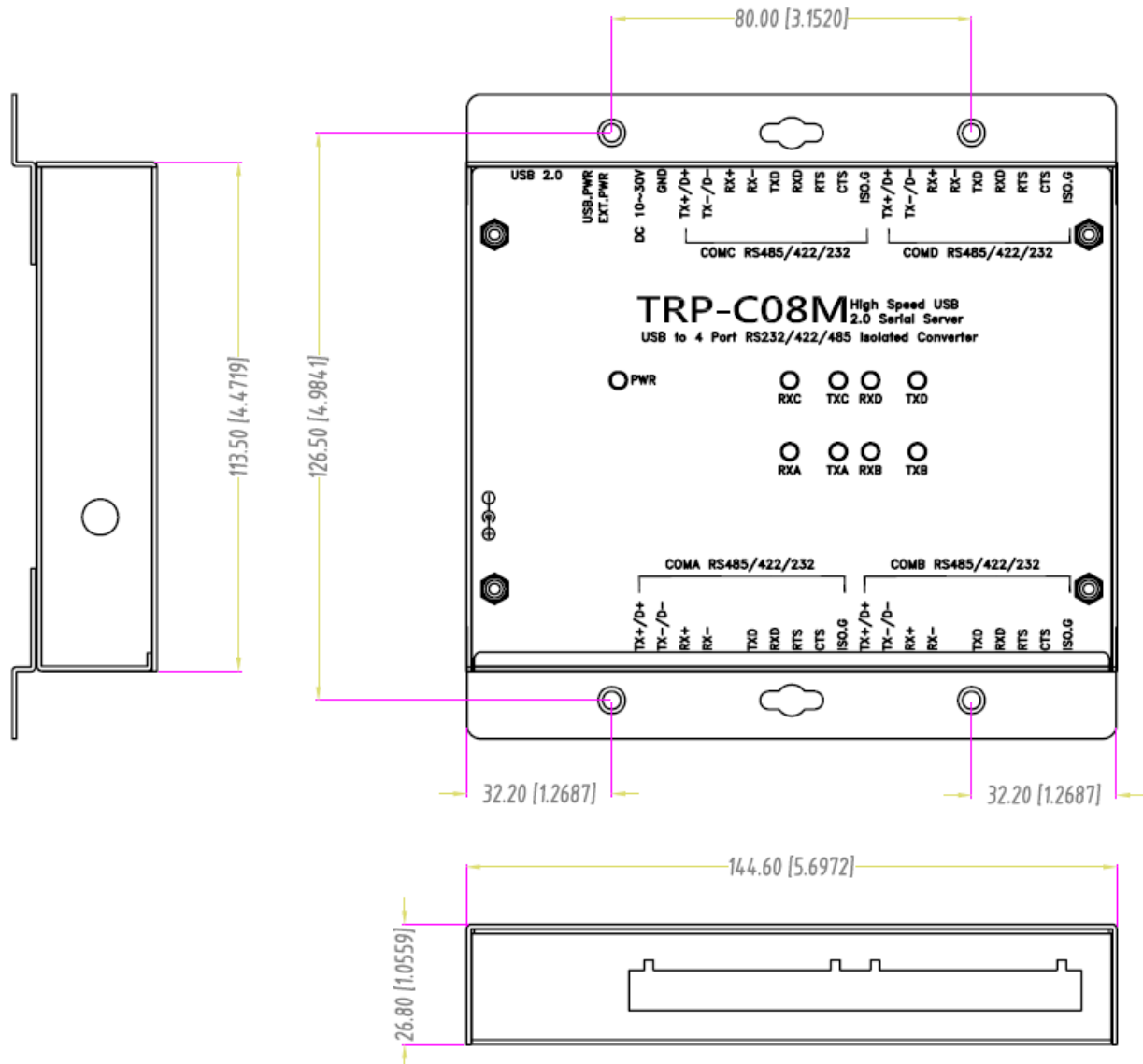
2-2. LED Indictor

PWR LED: System is ready.
RXA LED: COMA-RS232/422/485 Receiving.
TXA LED: COMA-RS232/422/485 Transmitting.
RXB LED: COMB-RS232/422/485 Receiving.
TXB LED: COMB-RS232/422/485 Transmitting.
RXC LED: COMC-RS232/422/485 Receiving.
TXC LED: COMC-RS232/422/485 Transmitting.
RXD LED: COMD-RS232/422/485 Receiving.
TXD LED: COMD-RS232/422/485 Transmitting.

2-3. Serial Connection

The TRP-C08M RS232/422/485 using the industrial European regulations connector,
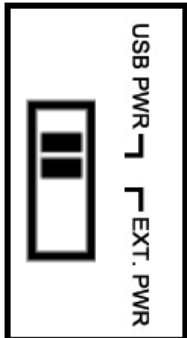The RS422 is TX +, RX +, TX-, RX-,
The RS485 is D +, D-
The RS232 is TXD, RXD, RTS, CTS, GND.
User according to the different needs of different serial devices to connect.

2-4. Power Connection

A power selection dip switch allows the TRP-C08M USB power source enable or disable.
User may select the power source by power select switch. The method is as below.

1. Find the power select switch which is located at the right side of USB port.
2. Move the switch to "USB PWR" position to enable USB power input, and disable screw terminal and external DC adapter. User may input power from USB port by USB A/B cable.
3. Move the switch to "EXT PWR" position to disable USB power input, and enable screw terminal and external DC adapter, user may input power from either screw terminal block or DC adapter.
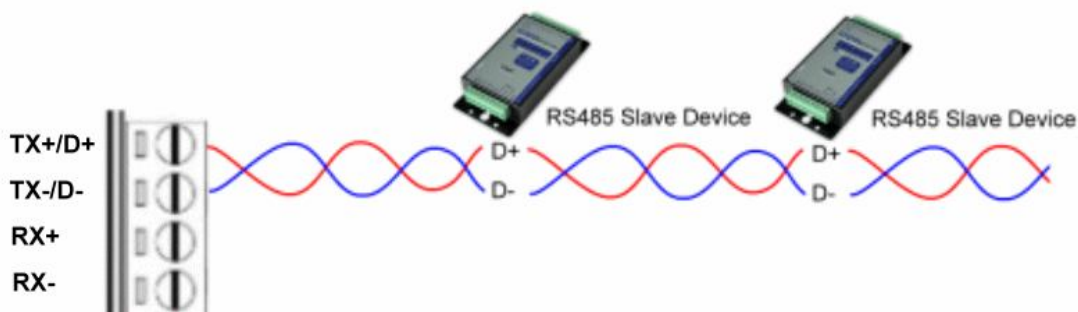
2-5. USB Connection

The TRP-C08M has a USB B-Type connector which is fully compliant with USB 2.0, the full rate speed up to 256Kbps.

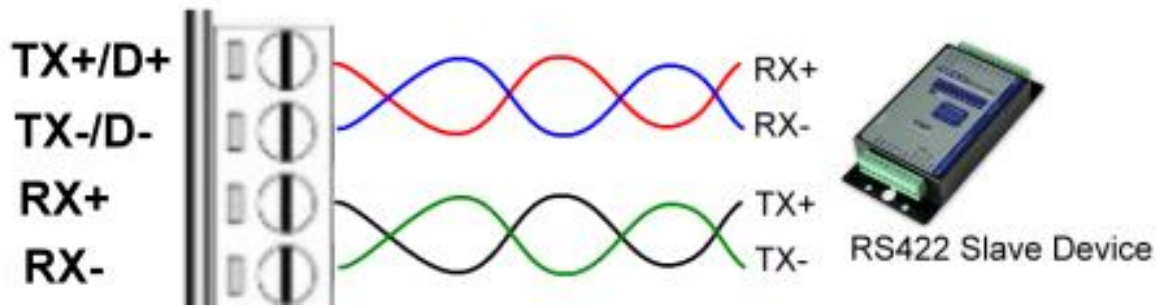*Please using the USB 2.0 cable ensures the TRP-C08M working fine.*

2-6. RS485 Wiring

The RS-485 mode supports the Transmit and Receive channels using 2-wire half-duplex operation.

2-7. RS422 Wiring

The RS-422 mode supports 4 channels with full duplex operation for Receive, Transmit, the data lines are in differential pairs.

2-8. RS232 Wiring

The RS-232 supports 5 channels plus Signal Ground and is configured as DTE like a computer. Signals are single ended and referenced to Ground. To use handshaking, Flow Control must be set to RTS/CTS during configuration. Refer to the Pin out table for connections.
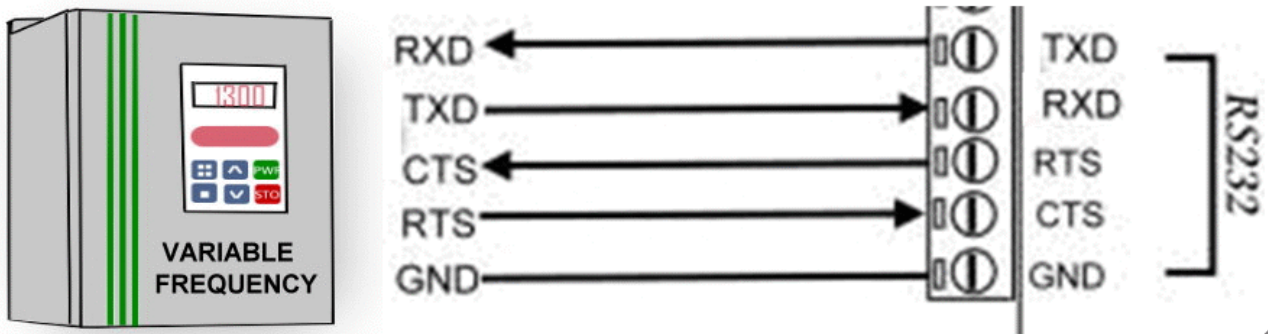
2-9. USB Cable Wiring

TRP-C08M is true USB 2.0 specification; it also supports USB V1.0, V1.1 standard. It is strongly to recommend user use the standard A to B type USB 2.0 cable if USB1.0 cable can not work properly.

3. TRP-C08M Software Installation.

1. Power on your computer and boot to Windows.
2. Put the driver CD in the CD-ROM then select the driver of O.S you want (See figure1)
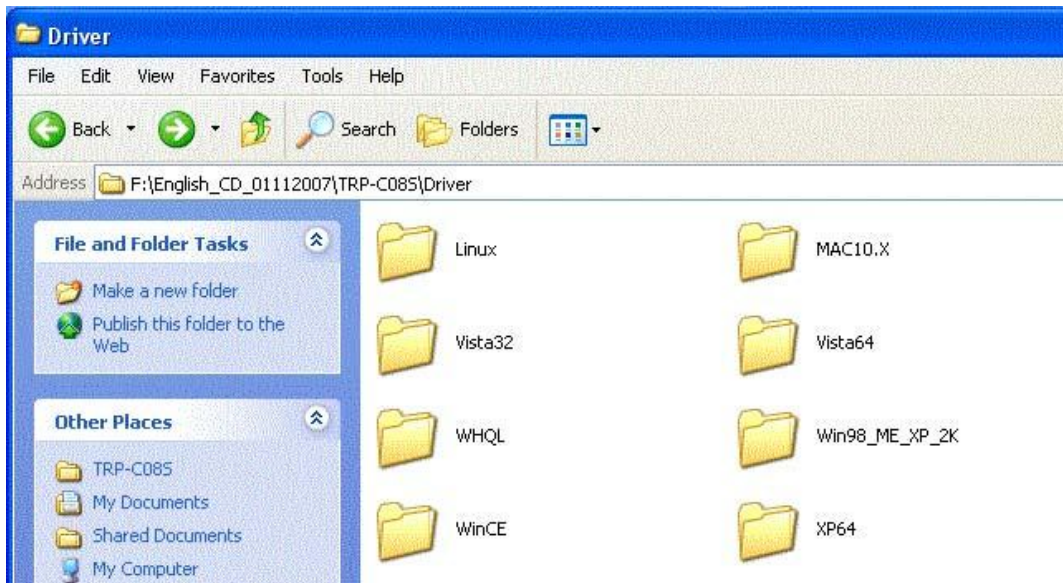
Fig.1

3-1 .Install Vista32/64 driver

Find "MSSetup.exe" utility which in the Vista64 folder. Double click on MSSetup.exe to start
the installation process. Make sure that the User installing the driver must be a member of the
Administrator group on the system

You will get a "User Account Control" window saying *"An unidentified program wants access to
your computer"*. Click on *Allow* to continue installing the Driver.

You will get an installation window as below, press "Install" button to install the drivers for
High-Speed USB Multi Serial Device.

During the installation process, a "Windows Security" warning message pops up informing that
"Windows cannot verify the publisher of this driver software". Ignore the warning message by
clicking on the option *"install this driver software anyway"*.

You will get the above message two times and you have to select *"install this driver software anyway"*. The utility displays a message stating "Installation completed". Use "Exit" button to complete the driver installation.

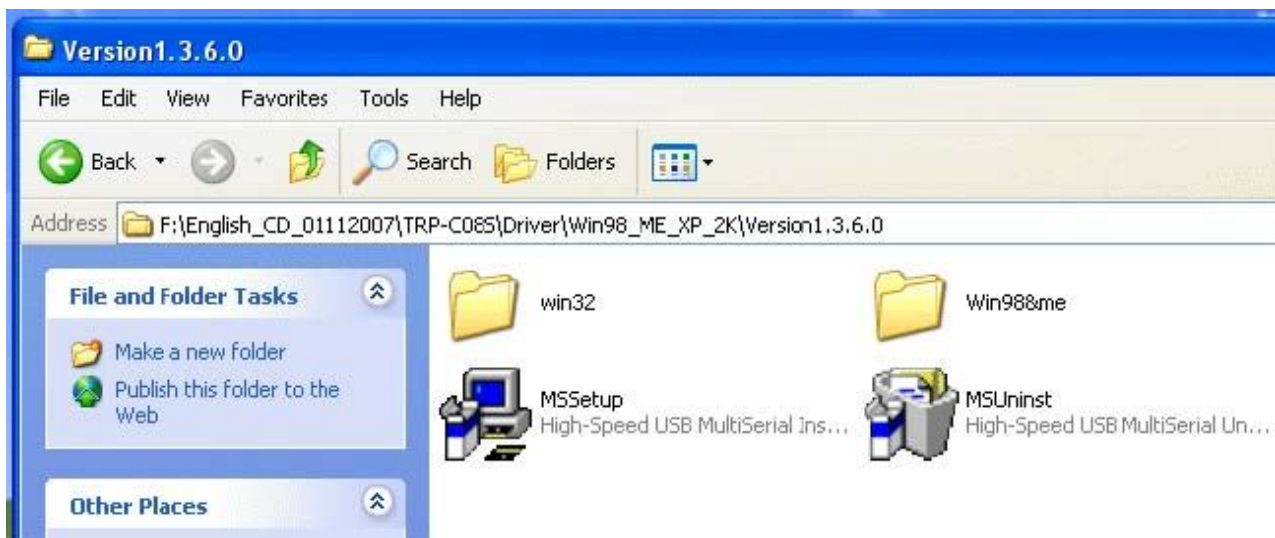### 3-1-1.TRP-C08M Device Installation & Detection:

Connect TRP-C08M to the USB Host controller of the PC using a USB cable. The first time you plug-in the cable into the USB port, Windows will start installing the device driver software. You can see the installation status at the pop-up message of system tray. After installation, the pop-up message says *"Your devices are ready to use", Device driver software installed successfully*.

TRP-C08M device detection can be confirmed by checking at the Device manager. Check for " *High-Speed USB MultiSerial Compound Device*" under *Universal Serial Bus controllers* and you will find "*High-Speed USB Serial Port (ComX)*" under the category *Ports (COM & LPT)*. Here 'X' in 'ComX' represents the serial port number. You can see the same in the figure below.
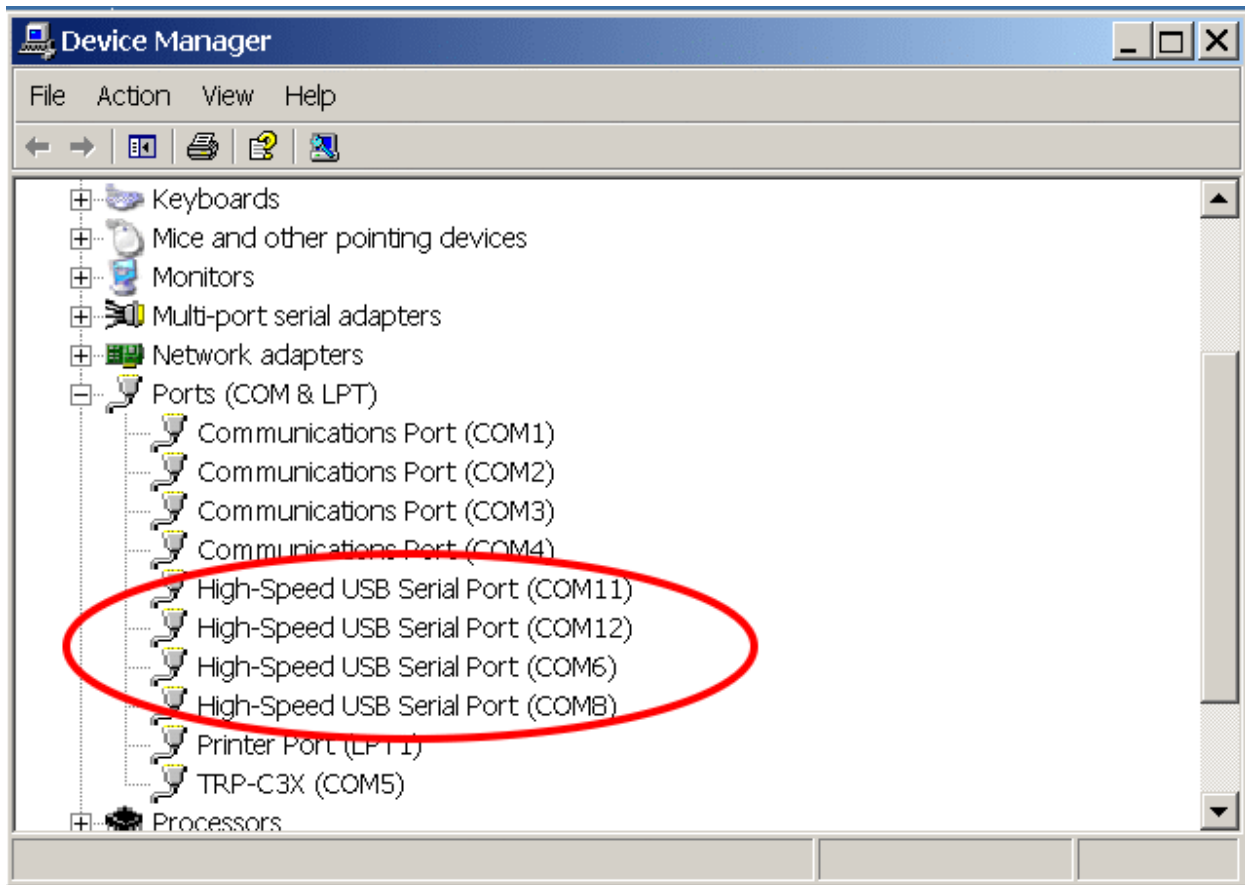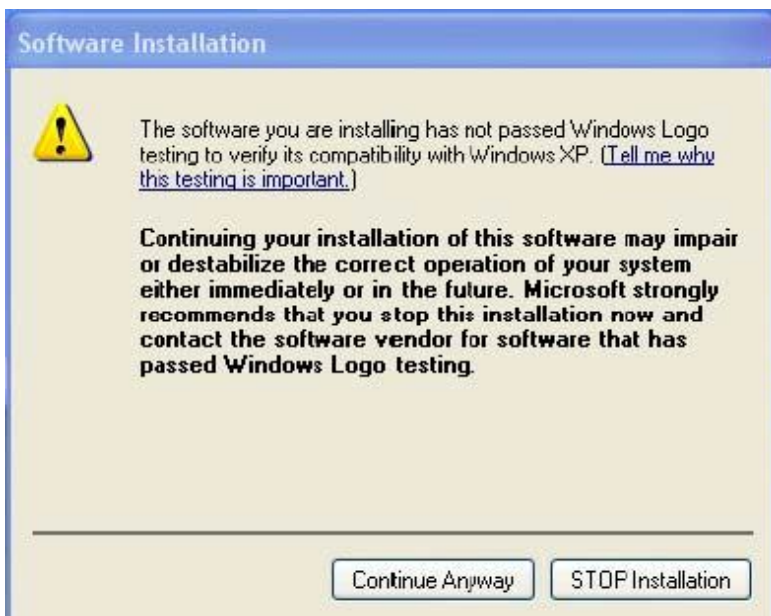
3-2 .Install XP driver

Find MSSetup.exe and MSUninst.exe which in the folders for Win XP/2K and Win98/ME operation system.

Use "MSSetup.exe" utility to install the driver. Double click on the utility to start the installation process. Press "Install" button to install the drivers for High-Speed USB Multi serial Device.

High-Speed USB MultiSerial Device Drivers Setup

Press "Install" button to Install the drives for High-Speed USB Multiserial Device. For Cancelling the Installation press "Exit" button.

Install   Exit

During the installation process, a warning message will popup informing the user that the software being used has not passed the Windows Logo testing. You can ignore the warning message by clicking on the option **"Continue Anyway"**.

Software Installation

The software you are installing has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)

Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the software vendor for software that has passed Windows Logo testing.

Continue Anyway   STOP Installation

The utility will display a message stating "Installation completed". Use **"Exit"** button to complete the driver installation.

Connect TRP-C08M to the USB Host controller of the PC by using a USB cable. The first time you plug the adapter into the USB port, Windows will bring up the **"Found New Hardware Wizard"** window to guide you through the initial configuration process. Select the option **"No, not this time"** and click on **"Next"** button to continue.

The following wizard helps you install the software for "High-Speed USB Multi Serial Compound device". Select the option **"Install the software automatically"** and click on **"Next"** to proceed further.

As specified in earlier section, a warning message will popup informing the user that the software being used has not passed the Windows Logo testing. You can ignore the warning message by

clicking on the option **"Continue Anyway"**.
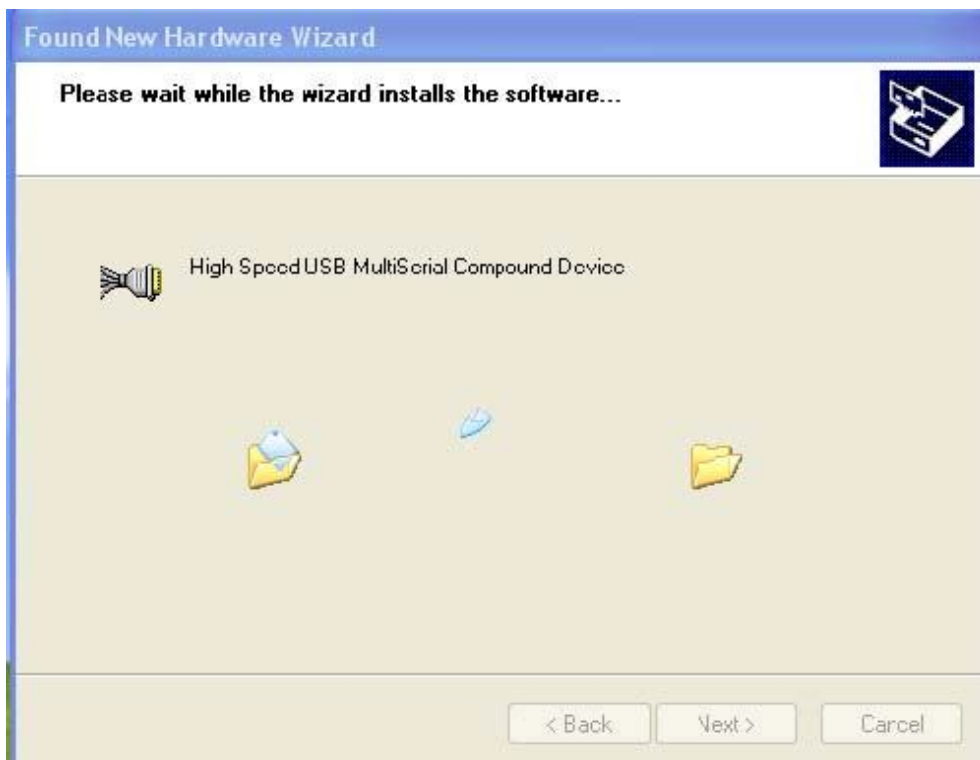
The following window conveys that the OS had finished the software installation for "High-Speed USB Multi Serial Compound Device". Click on **"Finish"** to complete found new hardware wizard.

Follow the same steps as explained for "High-Speed USB Multi Serial Compound Device" for the second port installation . Select the option **"Install the software automatically"……**


"Continue Anyway"··· ···

The following wizard indicates that the OS has completed installing the software for the first serial port. Continue the same process for installing the rest of the serial ports.

TRP-C08M device detection can be confirmed by checking the Device manager. Check for "High-Speed USB Multi Serial Compound Device" under Universal Serial Bus Controllers and

"High-Speed USB Serial Port (Com X)" under the category Ports (COM & LPT)
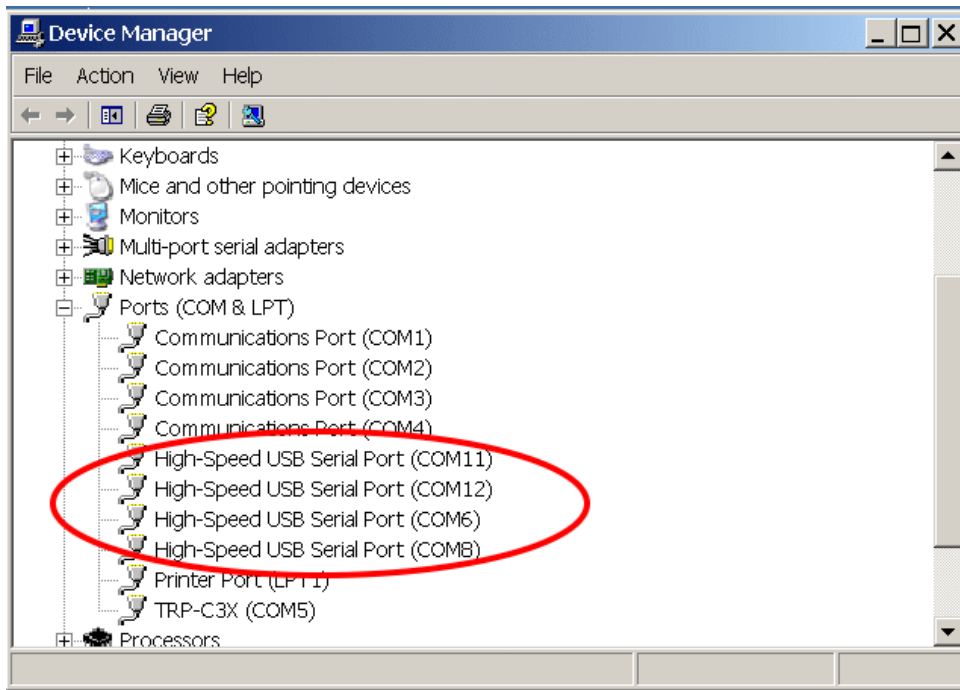

Now the TRP-C08M Device is ready to use.

3-3 .Uninstall XP driver Use **"MSUninst.exe"** to uninstall the TRP-C08M device driver from your PC. Double click on the utility to run the Uninstaller. Click on **OK** to proceed further.

Use the **"Exit"** button to complete the Uninstaller utility. No need to restart the PC, unless prompted by the OS. The driver can also be uninstalled from **Control panel – Add / Remove Programs**. Select the "High-Speed Multi Serial Compound Device" from the Add / Remove panel and click on **"Remove"** option. This will remove the MCSTRP-C08M device driver from the PC.
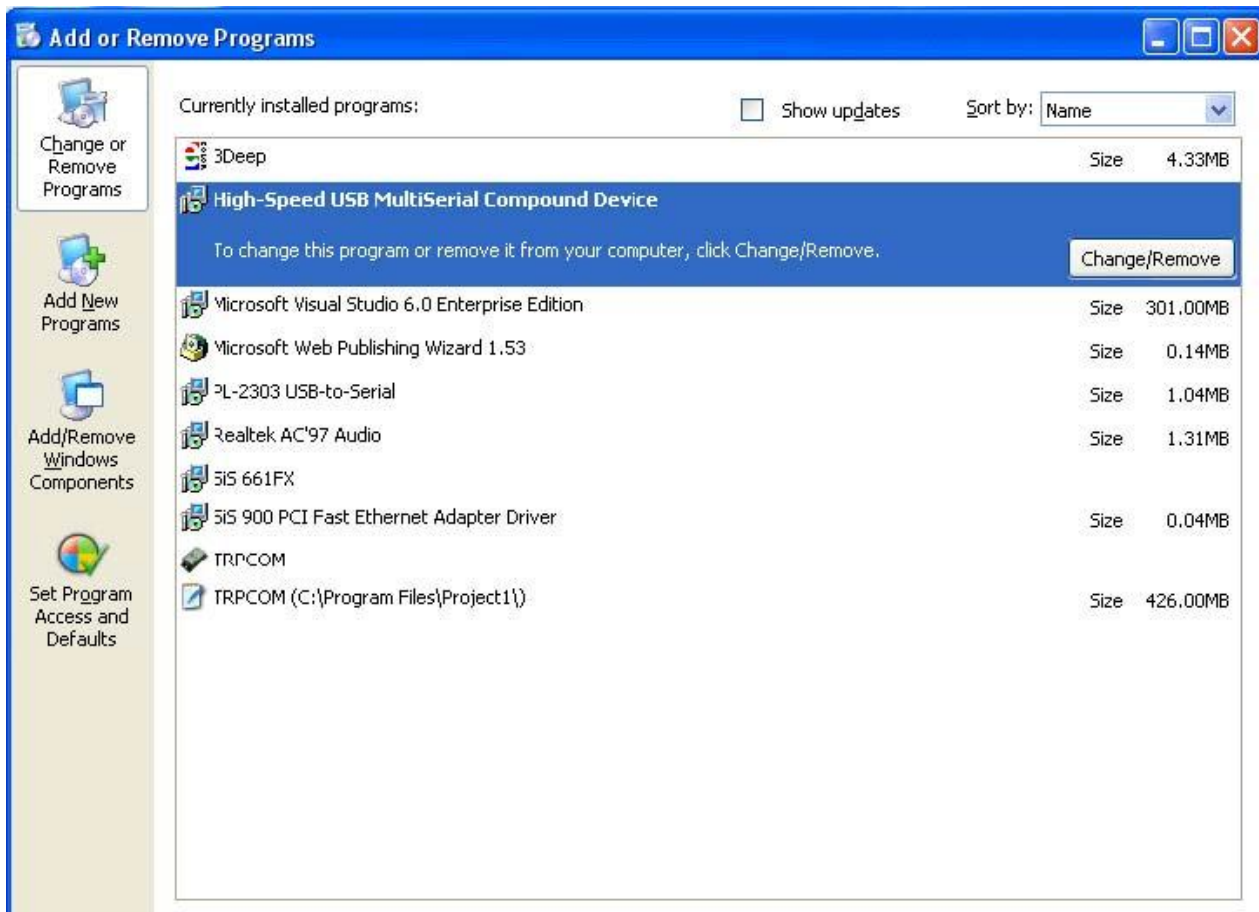
The TRP-C08M device driver can be un-loaded through **"Device Manager"** as well. Go to Device Manager, Select High-Speed USB Multi Serial Compound Device from the Universal serial Bus controllers, Right Click on it, Select **"Uninstall"** as shown below.
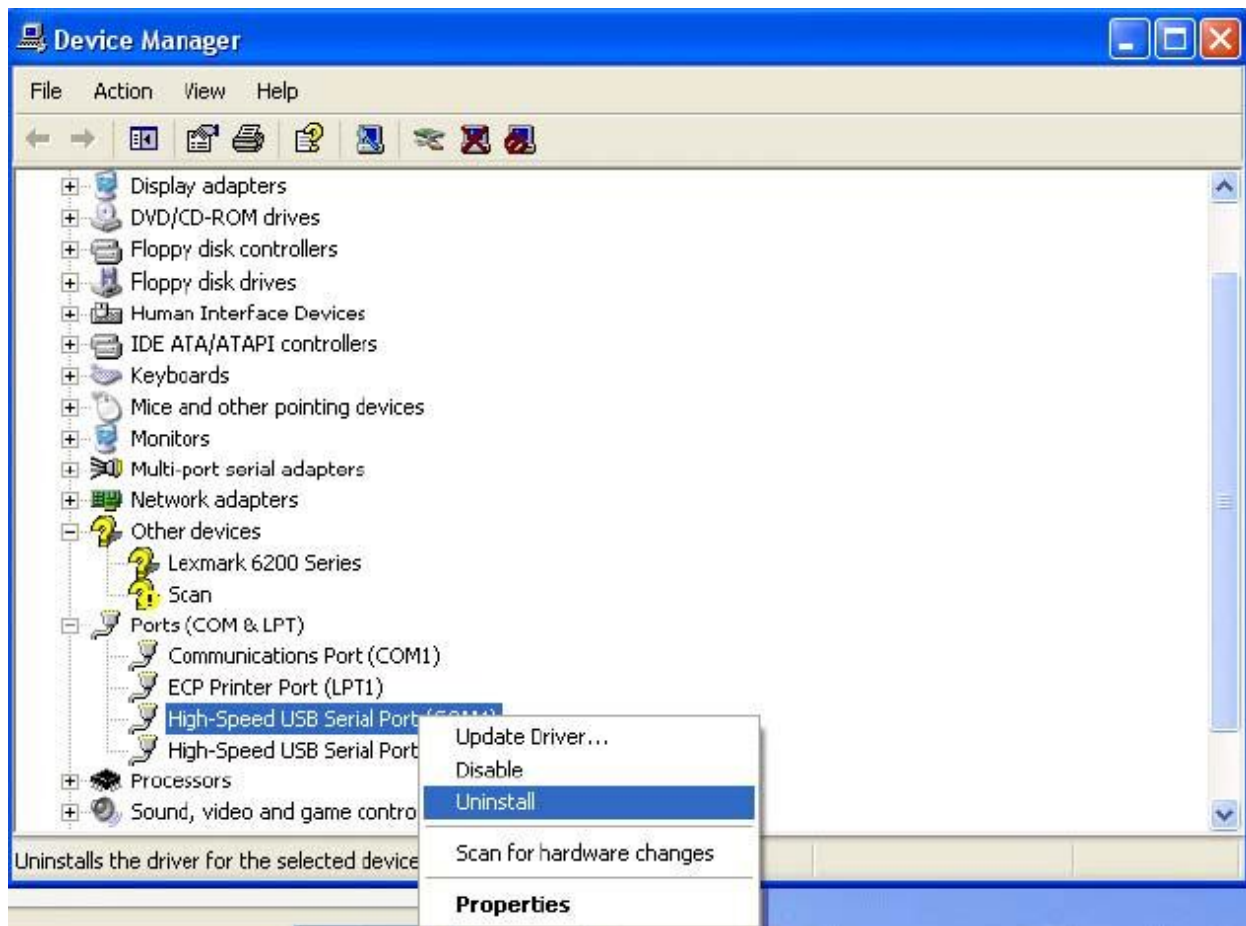
The OS will prompt the user whether to uninstall the device from the system. Click on "OK" to uninstall or "Cancel" to terminate the un-installation.

The Win2K software Installation, Detection and Un-Installation procedures are same as Win XP OS process. The only difference being, there is no need of user intervention during the detection of MCSTRP-C08M. When you connect MCSTRP-C08M to the USB, Win 2000 OS will automatically detect the device without interference of the user.

6. How to test TRP-C08M

Trycom Technology Co.,Ltd offers test utility, this is utilities may help user to demo and test TRP-C08M fast and easily. User may find the utilities in Trycom support CD or download from Trycom web www.trycom.com.tw , direct to perform TRPCOM.exe from the directory.
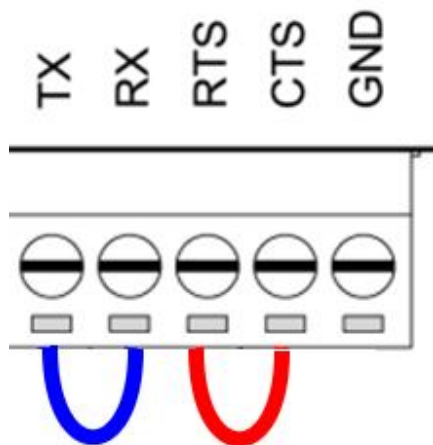
6-1 RS422 Loop Back Test
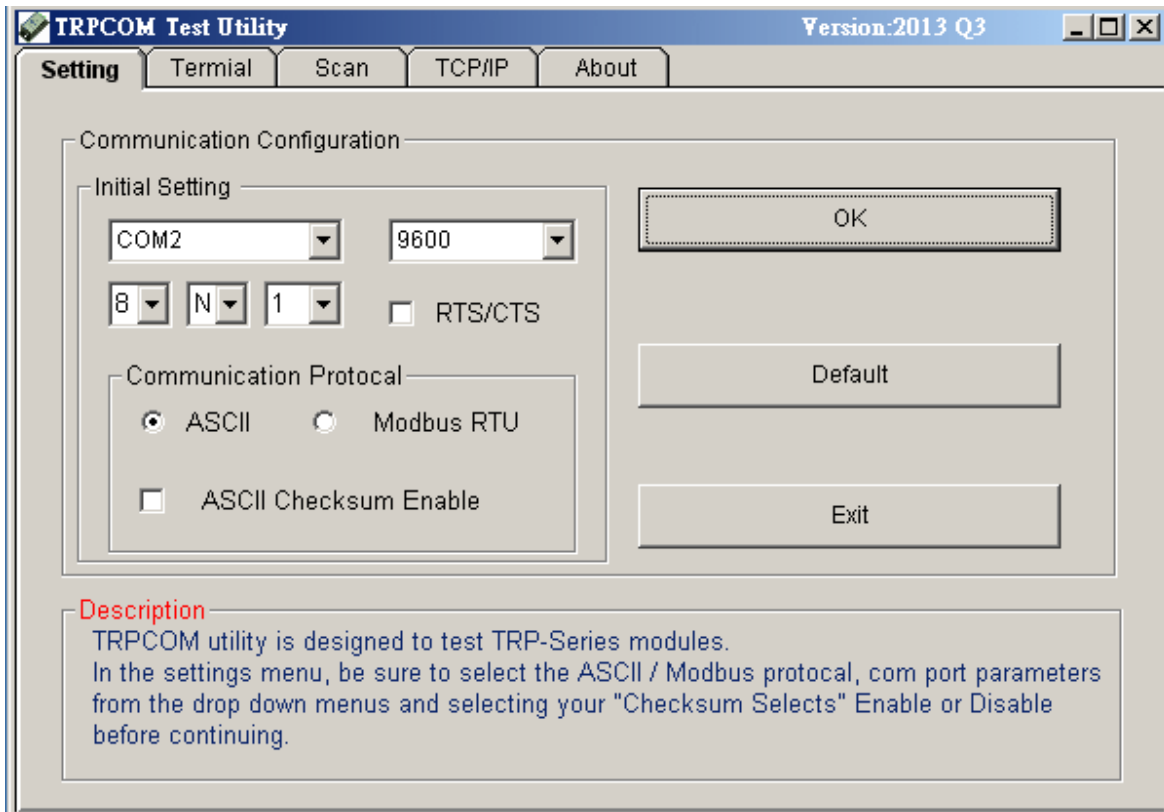Hardware wiring connection for RS422 loop test.
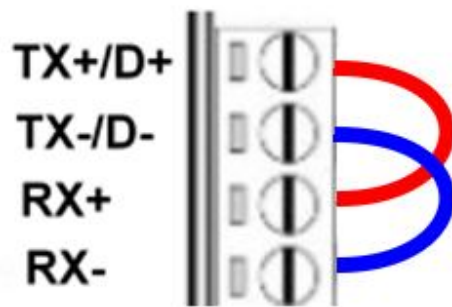
6-2 RS232 Loop Back Test

Hardware wiring connection for RS232 Loop Test.
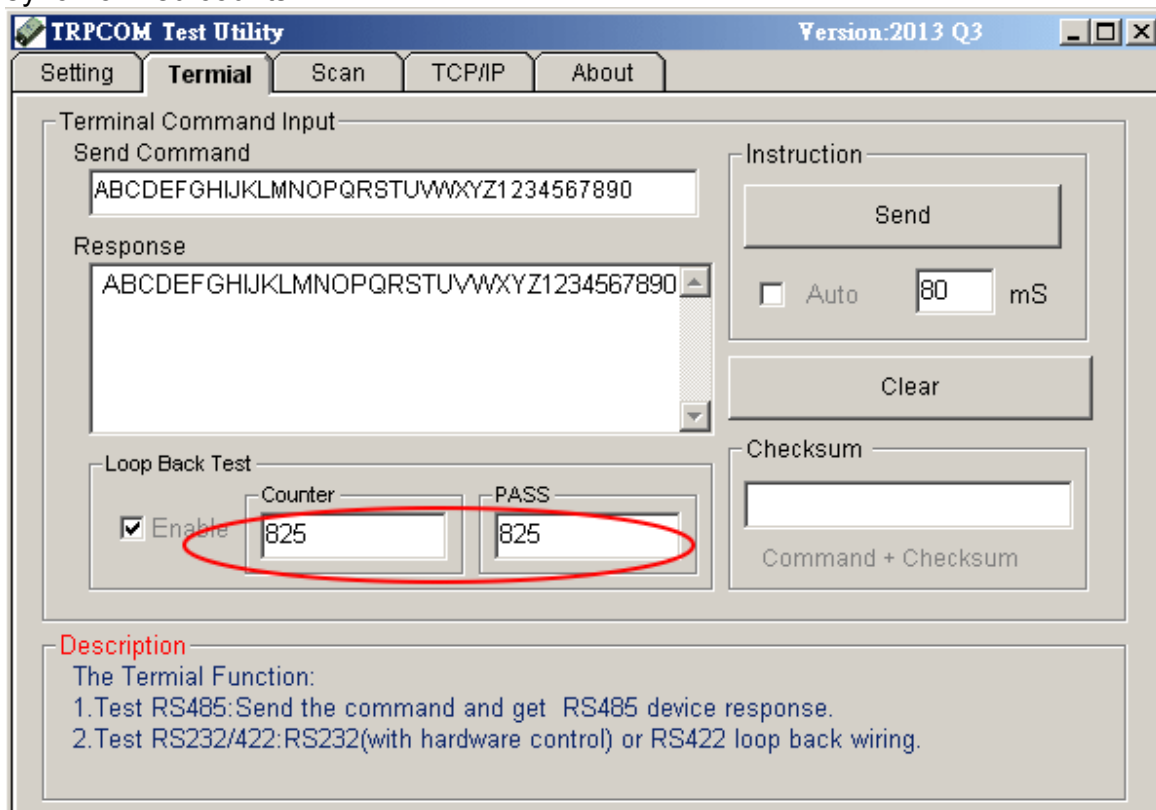

6-3.Loop Back Test Software

STEP1: Run the "TRPCOM.EXE" utility.
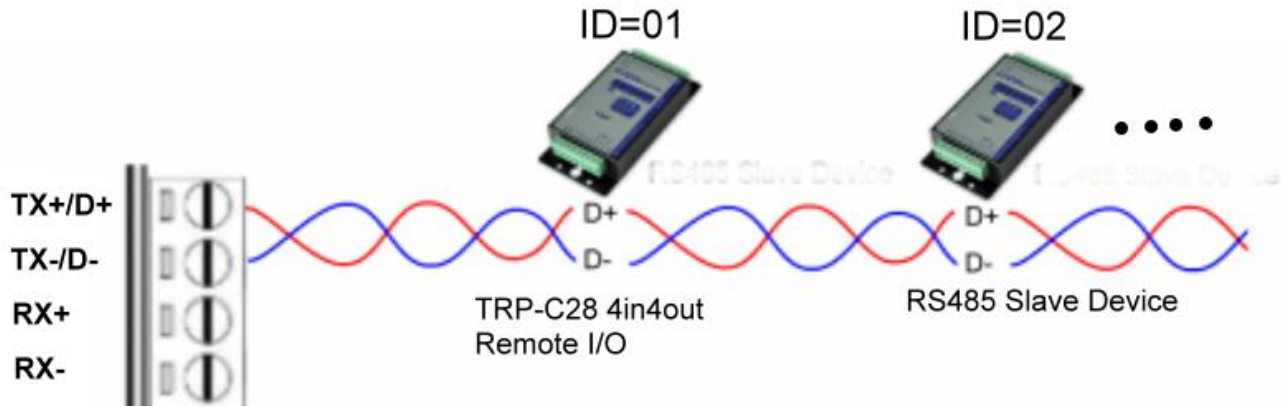**STEP2:** Click the "Setting" to set the com port and baud rate then press OK .

*Please note: "COM2" is an example of COM port number; the real COM number is assigned by user PC.

STEP3:. Click the "Terminal" then select Loop back enable, the counter value and pass value will be synchronized counts.
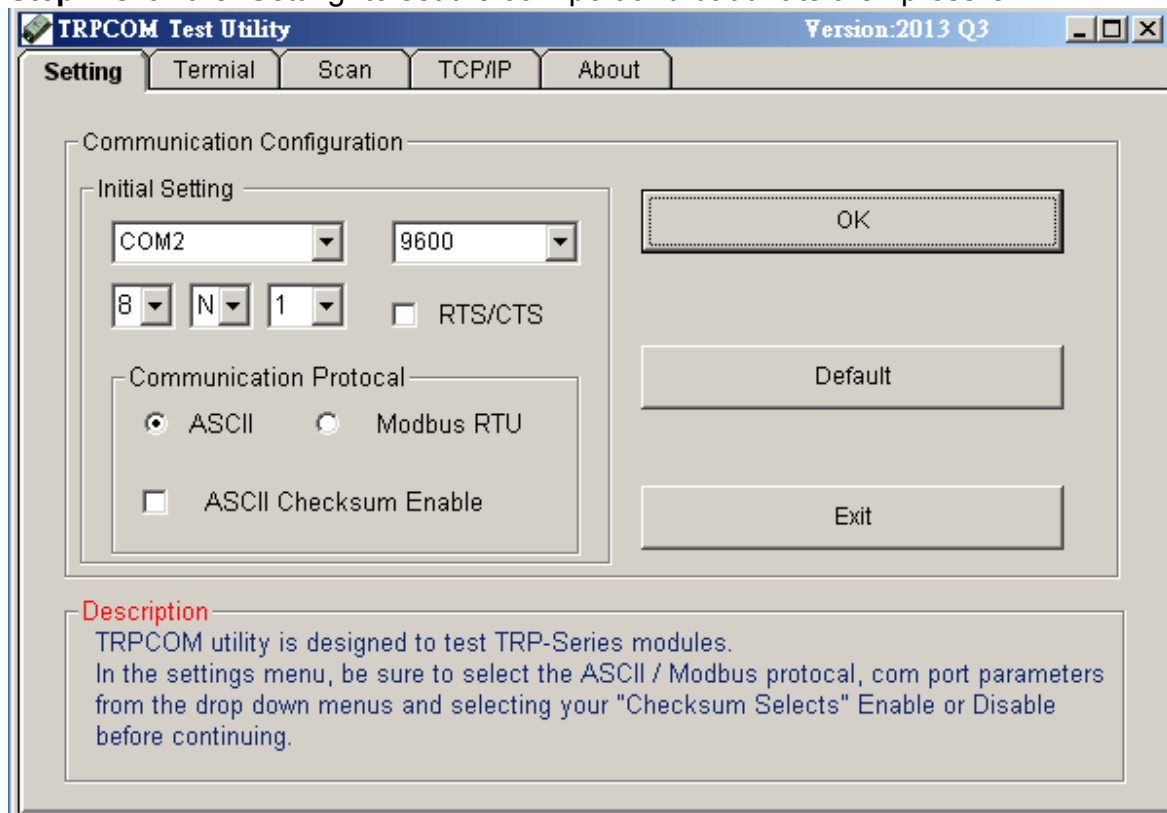
6-4. RS485 test

RS485 test mode, it can be connected to RS485 Device, such as connecting TRP-C28, send "$01M" instruction from the client side, when the TRP-C28 received command that will response "!01TRPC28" indicates execution completed.
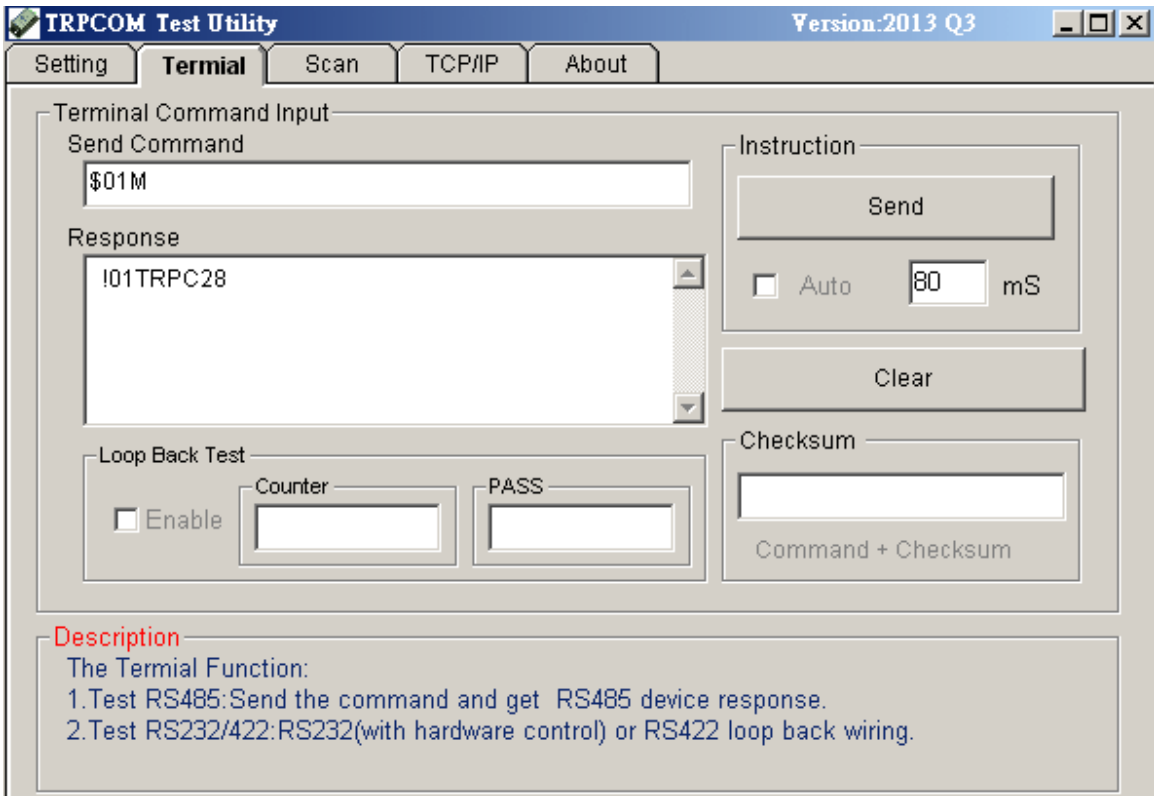

Step1. Run TRPCOM.exe utility.
Step2. Click the "Setting" to set the com port and baud rate then press OK.

Step3.Send command "$01M" and press "Send" button.

Step4. TRP-C28 response received.

8.TRP-C08M Application.